Astrobiology Workshop for Houston Teachers
"Pattern Recognition, Deep Time, and Paradigm Shifts"
Lunar and Planetary Institute
1 May 2010

Hosted by
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All talks and materials will be available here after the workshop:
http://astrobiology.nasa.gov/nai/houstonteachers/

8:00am – Gather, breakfast, opening activity
Timeline of Life on Earth
This activity will illustrate the 'deep time' theme and provide a surprising perspective on the evolution of life on Earth.

8:30am – Opening remarks, pre-assessment
"BOB" video viewing
This short video will introduce the theme of 'pattern recognition.'
http://www.youtube.com/watch?v=Nej4xJe4Tdg
2010-2011 New TEKS
We will use the new TEKS as a framework for a brief reflection and pre-assessment exercise.

9:15am – **Introduction to Astrobiology**
Margaret Race, SETI Institute
mracemom@aol.com
Dr. Race's talk will provide a broad overview to astrobiology and the 'paradigm shifts' it has enabled. She will also introduce each area of research detailed in the workshop, touching on ethics and societal impacts.

10:00am – BREAK

10:15am – **Extrasolar Planets and NASA's Kepler Mission**
Edna DeVore, SETI Institute
edevore@seti.org
This section will focus on the discovery of extrasolar planets, in particular by NASA's Kepler mission. The ***Transit Tracks*** *activity will be presented:*
http://kepler.nasa.gov/education/activities/transitTracks/

11:15am – **Was the Early Earth Habitable?**
Brooke Norsted, University of Wisconsin

brooke@geology.wisc.edu
*This section will highlight the discovery of an ancient zircon that has illuminated how science views the conditions on the early Earth with respect to habitability. A **Radiometric Dating** activity will be presented:* http://www.ucmp.berkeley.edu/fosrec/McKinney.html

LUNCH

1:00pm – **Hypothesis Card Game**
Daniella Scalice, NAI, daniella.m.scalice@nasa.gov
Mary Kado'oka, University of Hawai'i and NAI, kadooka@ifa.hawaii.edu
This card game highlights the relationship between Nature and Science through a pattern recognition lesson devoid of scientific content.

1:30pm – **Introduction to Extremophiles and Extreme Environments**
Daniella Scalice, NAI, Jackie Allen and Kay Tobola, JSC (see above for email addresses)
*In this section we will present a sequence of classroom activities to orient participants to extremophiles and their environments on Earth—from the **Astrobiology Education Poster** and the **Life on Earth…and Elsewhere? Educator Resource Guide in Astrobiology:***
http://astrobiology.nasa.gov/nai/education-and-outreach/products-and-resources/astrobiology-education-poster/
http://nai.arc.nasa.gov/library/downloads/Astrobiology-Educator-Guide-2007.pdf

2:00pm – **Life Without the Sun**
Lisa Pratt, Indiana University
prattl@indiana.edu
The activities will be followed by a talk from Dr. Pratt on her team's discovery of an ecosystem living in the deep subsurface of the Earth that has no relationship to photosynthesis…talk about extreme!

2:30pm – BREAK

2:45pm – **ALH84001, The Rock from Mars**
Kathie Thomas-Keprta, Simon Clemett, Jackie Allen, Kay Tobola, NASA Johnson Space Center
kathie.thomas-keprta-1@nasa.gov
simon.j.clemett@nasa.gov
*This section will begin with several hands-on activities, **Size and Shape Matters**, and **It's Alive!**, followed by a talk from Dr.'s Thomas-Keprta and Clemett on the history of this rock, its importance to the field of astrobiology, and the thread of science it spawned which poignantly illustrates the process of science in the real world.*
http://ares.jsc.nasa.gov/Education/Websites/AstrobiologyEducation/eyespyI.htm

3:45pm – **Wrap-up and Evaluations**
We will revisit the timeline activity, and re-reflect upon the TEKS as a post-assessment.

4:15pm - Adjourn